

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016496 A1

(51) International Patent Classification⁷: B01D 53/94, B01J 23/63, 23/89, 23/50

(21) International Application Number: PCT/GB2004/003470

(22) International Filing Date: 9 August 2004 (09.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 0318776.2 9 August 2003 (09.08.2003) GB

(71) Applicant (for all designated States except US): JOHNSON MATTHEY PUBLIC LIMITED COMPANY [GB/GB]; 2-4 Cockspur Street, Trafalgar Square, London SW1Y 5BQ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STANISLAW, Edmund, Golunski [GB/GB]; 2 Widemore Lane, Sonning Common, Reading RG4 9RR (GB). HOUEL, Valerie, Marie, Renee [FR/GB]; 11 Carey Street, Reading RG1 7JS (GB). HAWKINS, Andrea [GB/GB]; 14 St. Johns Hill, Reading RG1 4EE (GB). JAMES, David, William [GB/GB]; 14 St Johns Hill, Reading RG1 4EE (GB). POLLINGTON, Stephen, David [GB/GB]; 167 Stridedge, Blackfell, Washington, Tyne and Wear NE37 1LT (GB). POULSTON, Stephen [GB/GB]; 78 Wantage Road, Reading RG1 4EE (GB).

(74) Agent: NUNN, Andrew, Dominic; Johnson Matthey Technology Centre, Blounts Court, Sonning Common, Reading RG4 9NH (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/016496 A1

(54) Title: CATALYST STRUCTURE FOR TREATING NOX CONTAINING EXHAUST GAS FROM A LEAN BURN ENGINE

(57) Abstract: A catalyst structure for treating exhaust gas from a lean burn internal combustion engine comprises a substrate monolith comprising a lean NO_x catalyst (LNC) composition associated with at least one partial oxidation catalyst (POC), wherein the LNC composition is selected from the group consisting of: (a) silver or a silver compound supported on alumina; and (b) at least one metal selected from the group consisting of copper (Cu), iron (Fe), cobalt (Co) and cerium (Ce) supported on at least one zeolite, and wherein the at least one POC is selected from the group consisting of: (i) a bulk oxide, a bulk composite oxide or a bulk mixed oxide comprising at least one metal selected from the group consisting of manganese (Mn), iron (Fe), cerium (Ce) and praseodymium (Pr); and (ii) at least one of rhodium (Rh) and palladium (Pd) disposed on at least one inorganic oxide support.